

REMARKS

I. Status of the Application

Claims 21-36 are pending in this application, claims 17-20 were withdrawn from consideration, and claims 1-16 were previously canceled. In the July 18, 2008 office action, the Examiner:

A. Rejected claim 23 under 35 U.S.C. 112, second paragraph as failing to point out particularly and claim distinctly the subject matter that applicant regards as the invention.

B. Rejected claims 21, 24-30, and 32-36 under 35 U.S.C. § 103(a) as being unpatentable over Mistrater (U.S. Patent No. 5,681,391) in view of Pinsly (U.S. Patent No. 6,180,310) and Cai (U.S. Patent No. 6,270,850).

C. Rejected claims 22-23, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Mistrater in view of Pinsly and Cai and in further view of Langlois et al. (U.S. Patent No. 5,149,612).

In this response, Applicants have amended claims 21, 23-26, 31-34, and 36 to address the observed section 112 issue and other possible section 112 issues. Additionally, Applicant puts forth reasons as to why the Examiner's reliance on Cai is misplaced and that the section 103 ground of rejection fails for this reason. Applicant respectfully requests reconsideration in light of the foregoing amendments and following remarks.

II. Section 112 Rejections Have Been Addressed And Are Now Moot

Claim 23 was amended to address the lack of an antecedent basis noted by the Examiner in the Office Action mailed July 18, 2008. Additionally, Applicant reviewed the other pending claims and noticed possible language that may give rise to other section 112 issues. The amendments to the other claims presented above address these possible issues. Therefore, the section 112 ground of rejection is now moot.

III. Section 103 Ground of Rejection

Claims 21-36 have been rejection under 35 U.S.C. 103(a) as being obvious over the combination of Mistrater, Pinsly, and Cai. The Examiner states that Cai teaches that “the coating speed, i.e. the relative coating velocity, and the viscosity are related to the coating thickness uniformity.” *Citing Cai*, col. 4, lines 30-50. While the cited portion of Cai does identify an equation that shows a relationship between coating speed, viscosity, density, surface tension, and the wet coated layer thickness, Applicant respectfully contends that Cai does not teach or even suggest that an initial pump speed be adjusted in response to changes in viscosity to maintain a target thickness. Thus, the claim limitations regarding adjustment of an initial pump speed in response to a detected viscosity change are not obvious from the cited combination.

A. Claim 21

Claim 21 is directed to a method of manufacturing a photoreceptor. Claim 21 includes the limitations of filling a tube with a CTL solution, inserting a substrate into the tube, and pumping the solution through the tube. Claim 21, *inter alia*, includes the limitation that the vertical flow rate of the CTL solution is adjusted in response to deviations of the measured viscosity from an initial viscosity. In particular, claim 21 recites:

adjusting the initial pump speed to generate an adjusted vertical flow rate of the CTL solution in the tube in response to deviations of the measured viscosity from the initial viscosity as the substrate is being withdrawn from the tube, the adjusted vertical flow rate being selected in accordance with a magnitude of the deviations and the predetermined pull rate to provide an adjusted differential rate to maintain the target thickness of the CTL coating on the substrate as the substrate is withdrawn from the tube.

Thus, the claim requires a pump speed adjustment in response to a detected viscosity change. Cai does not provide this element that the Examiner has admitted is missing from both Mistrater and Pinsly.

Cai discloses a known equation that relates coating speed to viscosity, density, surface tension, and the wet coated layer thickness. The reference then states that “coating speed may be constant or varied depending upon the desired layer thickness profile (that is, the layer may have a uniform thickness or a tapered thickness along the length of the substrate).” *Cai*, col. 4, lines 50-53. Thus, a uniform thickness is obtained with a constant coating speed and a tapered thickness is obtained with a varied coating speed. Thus, Cai explicitly teaches that the coating thickness may be varied by varying the coating speed

only. There is, perhaps, an inherent teaching that one of the other parameters may be varied to change the thickness; however, the remaining parameters, including coating speed, would have to remain steady. Thus, all that Cai may explicitly or inherently teach is that one of the parameters in the equation may be varied with an attendant effect on the coating thickness. There is no teaching or suggestion that one parameter can be changed in response to a change in another parameter to maintain a particular coating thickness. While that teaching is absent from Cai, it is present in the Applicant's specification. Thus, the Examiner has impermissibly used Applicant's specification to interpret the prior art references and the section 103 ground of rejection should be withdrawn.

The invention of Cai, namely, positioning of an insert to provide an appropriate gap distance, was devised to address viscosity of a coating solution changing in response to shear stress. *Cai*, col. 1, lines 18-59. The steps of the inventive method reflect a *selection* of appropriate parameters to obtain a desired thickness. *Cai*, col. 4, line 4 to col. 5, line 48. The method does not address compensating for changes in viscosity with adjustments to another parameter. Instead, Cai expects that the parameters are selected prior to commencement of the process and the process is then performed with the selected parameters to obtain the desired result. Applicant's invention arises from monitoring viscosity *during* the coating process and making adjustments to pump speed (or angular velocity) to obtain an appropriate differential rate that achieves the target thickness uniformity.

Pinsly does not aid the Examiner's position because Pinsly teaches only that viscosity can be monitored and adjusted with regulation of the solvent in the solution. No adjustment is made of another parameter in the dipping process to compensate for the viscosity changes. Only Applicant's claimed invention teaches a change being made in a pump speed to alter a vertical flow rate in response to a change in viscosity. Thus, Applicant has made a meritorious contribution to the art and the monitoring/adjustment method is non-obvious over the combination of Mistrater, Pinsly, and Cai. Accordingly, Applicant submits that claim 21 is patentable over the cited prior art.

B. Claims 22-29

Claims 22-29 depend from claim 21, and, therefore, are patentable for at least the same reasons as claim 21. Moreover, claims 22-29 include additional limitations not taught by the prior art. For example, claims 22 and 23 include the limitation that the CTL solution is pumped with a motor driven pump having a variable speed controller that enables the angular velocity of the pump to be controlled. Claim 24 contains the limitation that the adjusted pump speed is modified to return the vertical flow rate to the predetermined flow rate. Claims 25-27 disclose increasing the pump speed if the measured viscosity is greater than the target or initial viscosity, and decreasing the pump speed if the measured viscosity is lower than the target or initial viscosity. Claim 28 is limited to a specific range for pump speeds not disclosed in any reference. For at least

these additional reasons, claims 22-29 are patentable over all references of record, either alone or in combination.

C. Claims 30-36

Claim 30 is directed to a method of controlling the thickness of a coating layer on an article. Claim 30 includes limitations similar to those found in claim 21. For example, claim 30 includes the limitation of:

adjusting the vertical flow rate of the coating solution from the initial vertical flow rate to an adjusted vertical flow rate in response to the detected viscosity deviating from the initial viscosity, the adjusted vertical flow rate causing an adjusted differential rate, the adjusted differential rate being selected in accordance with the pull rate and the detected deviating viscosity to maintain the target thickness of the coating layer.

Therefore, the reasons for patentability presented above for claim 21 are applicable to claim 30.

Claims 31-36 depend from new claim 30, and, therefore, are patentable for at least the same reasons as claim 30. Claims 31-36 include additional reasons for patentability over the prior art that are similar to those noted above with reference to claims 22-29. For at least these additional reasons, claims 31-36 are patentable over all references of record.

IV. Conclusion

For all of the foregoing reasons, Applicant respectfully submits a patentable contribution to the art has been made. Favorable reconsideration and allowance of this application is therefore respectfully requested.

In the event Applicant has inadvertently overlooked the need for an extension of time or payment of an additional fee, the Applicant conditionally petitions therefore, and authorizes any fee deficiency to be charged to deposit account number 24-0037.

Respectfully submitted,
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